

***MAGNETIC  
SOUND RECORDING TAPE  
REEL-TO-REEL  
SPECIFICATIONS***



**maxell®**

# MAXELL MAGNETIC RECORDING TAPE SPECIFICATIONS

Type	UO-50 PROFESSIONAL HIGH ENERGY MASTERING TAPE	UD-35 PROFESSIONAL HIGH ENERGY MASTERING TAPE	LNA-50 PROFESSIONAL LOW NOISE MASTERING TAPE	LNE-50 PROFESSIONAL LOW NOISE MASTERING TAPE	LNE-35 PROFESSIONAL LOW NOISE MASTERING TAPE	LNE-25 DOUBLE PLAY LOW NOISE MASTERING TAPE	LNE-18 TRIPLE PLAY LOW NOISE MASTERING TAPE	A-50Y CALIBRATION STANDARD RECORDING TAPE	A-50 GENERAL PURPOSE STANDARD RECORDING TAPE	E-35 GENERAL PURPOSE STANDARD RECORDING TAPE
PHYSICAL PROPERTIES										
BASE FILM MATERIAL	Polyester	Polyester	Cellulose Acetate	Polyester	Polyester	Polyester	Polyester	Cellulose Acetate	Cellulose Acetate	Polyester
FILM THICKNESS	1.5 mil	1.0 mil	1.5 mil	1.5 mil	1.0 mil	.5 mil	.5 mil Thin Coat	1.5 mil	1.5 mil	1.0 mil
STANDARD WIDTHS	¼", ½", 1", 2"	¼", ½", 1", 2"	¼"	¼"	¼"	¼"	¼"	¼"	¼"	¼"
STANDARD LENGTH (10½ NAB REEL)	2500'	3600'	2500'	2500'	3600'	4800'	3600' (7" Reel)	2500'	2500'	3600'
YIELD STRENGTH AT 5% ELONGATION	6.61 lbs.	4.41 lbs.	5.51 lbs.	6.61 lbs.	4.41 lbs.	3.09 lbs.	2.87 lbs.	4.85 lbs.	4.41 lbs.	4.41 lbs.
BREAKING STRENGTH	12.13 lbs.	8.16 lbs.	7.72 lbs.	12.13 lbs.	8.16 lbs.	6.61 lbs.	5.30 lbs.	6.84 lbs.	5.51 lbs.	5.51 lbs.
ELECTROACOUSTIC PROPERTIES										
OPERATING BIAS CURRENT LATITUDE (%)	+15 -5	+15 -5	±10	±10	±10	±20	±20	±10	±20	±20
SENSITIVITY (dB)	+1.5	+1.5	+1.0	+1.0	+1.5	+2.0 Min	-2.0 Min	±1.0	+2.0	+2.0
FREQUENCY RESPONSE (dB)										
7500 Hz	+6	+6	+4	+5	+4	+7.0	+10	±1.0	+2.0	+2.0
12500 Hz	+8	+8	+5	+7	+5					
15000 Hz	+10	+10								
OUTPUT UNIFORMITY (dB)										
400 Hz	0.5 dB Max	0.5 Max	1 Max	1 Max	1 Max	2.0 Max	3.0 Max	1.0 Max	2.0 Max	2.0 Max
7500 Hz	0.5 dB Max	0.5 Max	1 Max	1 Max	1 Max	2.0 Max	2.0 Max	1.0 Max	2.0 Max	2.0 Max
SIGNAL TO NOISE RATIO (dB)	63 dB	63	62	62	62	60	60	61	59	59
PRINT THROUGH (dB)	56 dB	53	55	53	52	50	48	55	54	51
ERASURE (dB)	70 dB	70	70	70	70	70	70	70	70	70

**QUALITY**

**DEPENDABILITY**

**CONSISTENCY**

# TESTING PROCEDURE FOR MAGNETIC SOUND RECORDING TAPE

## GENERAL

### Reference Tape

Reference tape is the tape, with specified recording properties, to which the recording properties of tapes to be evaluated can be related. The reference tape is the tape specified in JIS C5540.

### Reference Level

Reference level is the output level obtained by replaying Part 1 of the test tape record specified in JIS C5541.

### Recommended Bias Current

Recommended bias current is expressed as percentages of the reference tape peak bias which is taken as 100% and referred to as "Standard Bias." Peak bias determinations are made at a recorded sine wave length of 18.75mil (400Hz, 7.5 ips) and at a level well below tape saturation. The peak value is the geometric mean of those currents producing output 1/2dB below, and on either side of peak output.

### Nominal Recording Level

Nominal recording level is the recording level which is the reference level obtained by using the reference tape at 400Hz

### Reference Recorder

A reference recorder should conform with the characteristics

specified in JIS C5542.

The time constants of the playback equalization are 3180 micro second and 90 micro second rise time with the tape speed at 7.5ips.

### Test Method for Physical Properties

Total thickness measurements are averages for ten layers of tape over a length of approximately two feet.

Tape width measurements are averages for 5 points in any place by using a comparator having accuracy to 0.04mil.

### Yield Strength at 5% Elongation

Yield strength is defined as that force which produces 5% elongation of the sample.

### Breaking Strength

Breaking strength is equivalent to ultimate strength for the magnetic tape at breaking point.

## TEST METHOD FOR ELECTRO-ACOUSTIC PROPERTIES

### Optimum Bias Current

The 400Hz tone is recorded on the tape as a function of bias current in such a way that the top of the recorded level shall not be larger than Nominal Recording Level. Optimum Bias Current is the peak bias current.

### Sensitivity

Relative tape sensitivity is the sensitivity of the tape under measurement minus the sensitivity of the reference tape, expressed in dB.

### Test conditions:

Recording level; Nominal recording level  
Frequency ; 400Hz  
Bias current ; Recommended bias current

### Frequency Response

Frequency response is the frequency response of the tape to be measured minus the frequency response of the reference tape, expressed in dB.

Test Conditions,  
Recording level; 10dB below nominal recording level  
Frequency ; 400Hz, 7500Hz, 12500Hz and 15000Hz  
Bias current ; Recommended bias current

### Signal to Noise Ratio

Signal to noise ratio is the ratio, expressed in dB, between the record playback output and the weighted noise level. The recording is made at recommended bias and 1000Hz. The weighted noise level, also called bias or zero-signal noise level, is measured through NAB weighting network.

### Harmonic Distortion

The total harmonic distortion is indicated in %.

Test Conditions:  
Recording level; 10dB above nominal recording level  
Frequency ; 400Hz  
Bias current ; Recommended bias current